Uses of Micropower Radars for Speech Coding and Applications:

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It has recently become possible to measure the positions and motions of the human speech organs, as speech is being articulated, by using micropower radars in a noninvasive manner. Using these instruments we measure the vocalized excitation function of human speech and thereby obtain the transfer function of each constant vocalized speech unit by deconvolving the output acoustic pressure from the input excitation function. In addition, we measure the positions of the tongue, lips, jaw, velum, and glottal tissues for each speech unit. Using these data we are able to form very descriptive feature vectors for each acoustic speech unit. We believe that these new data, in conjunction with presently obtained acoustic data, will lead to more efficient speech coding, recognition, synthesis, telephony, and prosthesis.

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